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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,687	12/13/2001	Masato Fujikake	1422-0509P	8189

2292 7590 07/22/2003

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EXAMINER

REDDICK, MARIE L

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 07/22/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/009,687

Applicant(s)

FUJIKAKE ET AL.

Examiner

Judy M. Reddick

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/13/01, 02/14/02 & 03/13/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 & 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. *Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.*

Information Disclosure Statement

2. *The information disclosure statements filed 12/13/01 & 03/13/02 have been considered and placed in the application file.*

Claim Rejections - 35 USC § 112

3. *The following is a quotation of the second paragraph of 35 U.S.C. 112:*

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. *Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.*

The recited "at least one compound (B) selected from an ester (c) obtained from a polyhydric alcohol and a fatty acid, an alkylene oxide adduct of an ester (d) obtained from a polyhydric alcohol and a fatty acid" per claim 1 and "at least one compound selected from pentaerythritol tetraallyl ether, tetraallyloxyethane, triallyl phosphate and polyallyl saccharose" per claim 3 constitutes indefinite subject matter as per the use of improper Markush terminology. Use of "selected from the group consisting of" is proper and is suggested.

Claim Rejections - 35 USC § 103

5. *The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:*

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
6. *The factual inquiries set forth in Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:*

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1. *Determining the scope and contents of the prior art.*
2. *Ascertaining the differences between the prior art and the claims at issue.*
3. *Resolving the level of ordinary skill in the pertinent art.*
4. *Considering objective evidence present in the application indicating obviousness or nonobviousness.*

7. *This application currently names joint inventors. In considering patentability of the claims under 35*

U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. *Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sehm(U.S. 4,419,502).*

Sehm teaches processes for forming carboxyl-containing polymers and compositions therefrom wherein, said methods comprise polymerizing olefinically unsaturated carboxylic acids containing at least one activated carbon-to-carbon olefinic double bond and at least one carboxyl group in methylene chloride, in the presence of a free radical forming catalyst and a polyoxyethylene alkyl ether and/or a polyoxyethylene sorbitol ester surface active agent having an HLB value in the range of greater than 12. More specifically, Sehm teaches that the carboxyl containing polymers include copolymers derived from at least one carboxylic acid, viz., methacrylic acid and up to about 5 wt.%, based on total carboxylic acid monomer plus, if present, other monomer(s), a polyfunctional vinylidene x-linking monomer such as diallyl ester monomer, divinyl benzene, polyallyl phosphate, etc.(see, e.g., the Abstract and col. 1-6 and the claims of Sehm). More specifically, Sehm exemplifies, per Run 1, a process for preparing a crosslinked, acrylic acid polymer and an aqueous composition therefrom comprising 97 weight parts of polymer, as follows: A mixture of 514.8 weight parts of methylene chloride, 26.5 weight parts of acrylic acid, 0.5 weight parts of trimethylolpropane diallyl ether and 1.1 weight parts of polyoxyethylene(23)lauryl ether (HLB 16.9) was charged to a stirred reactor, heated to reflux under nitrogen to about 40.degree. C. Then 0.8 weight parts of di(2-ethylhexyl)peroxy dicarbonate peroxide was injected into the reactor and the mixture was maintained at 40 degrees C. After about 20 minutes, a mixture of 128 weight parts of methylene chloride, 86 weight parts of acrylic acid, 1.8 weight parts of trimethylolpropane diallyl ether and 3.5 weight parts of polyoxyethylene(23)lauryl ether was metered into the reactor over a 4 hour period. Heating was continued for 2 hours after the metering was completed. The slurry viscosity during the course of the polymerization was low and

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substantially free of agglomerates and the Quality Index of the resulting slurry was 3. The polymer slurry was filtered and the polymer dried under vacuum and heat. Ninety seven weight parts of polymer was obtained. 0.2, 0.5 and 1.0 weight percent mucilages in water were prepared, the pH of the mucilages are adjusted to 7.2 with a NaOH solution and the viscosity of each determined by the Brookfield Viscometer at 20 rpm. When this Example was repeated with sorbitan polyoxyethylene(20)monostearate (HLB 14.9), similar satisfactory results were obtained with a Slurry Quality Index of 6.

The disclosure of Sehm differs basically from the claimed invention as per the content of carboxyl group-containing polymer, i.e., 100 parts by weight(Inventive) vs. 97 parts by weight(Sehm). However, it would have been obvious to the skilled artisan, in view of the close proximity between the content of polymer, as claimed(100 weight parts) and in that described in Sehm(97 weight parts) and with the understanding that the resulting expectation that the carboxyl group-containing polymer composition would have the same or substantially the same properties(Titanium Metals Corp. v. Banner, 778 F. 2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985)).

Claim Rejections - 35 USC § 102

9. *Claims 1-7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nagasuna et al(U.S. 4,973,632)*

Nagasuna et al disclose and exemplify water absorbent resins, compositions therefrom and processes for producing said water-absorbent resins wherein, said processes involve an aqueous solution of water-soluble ethylenically unsaturated monomer having a viscosity of 15 cps or more, determined by a Brookfield rotational viscometer (25.degree. C., 0.6 rpm), with using a sucrose fatty acid ester and/or a polyglycerol fatty acid ester as a dispersing agent, are dispersed and suspended in a inert hydrophobic organic solvent and polymerized by an initiator for radical polymerization. More specifically, Nagasuna et al teach that in the production process, examples of the water-soluble ethylenically unsaturated monomer constituting the water-absorbent resin in the present invention, include monomers of anionic character such as acrylic acid, methacrylic acid, crotonic acid, maleic acid and its anhydride, fumaric acid, itaconic acid, and 2-(meth)acryloylethanesulfonic acid, and 2-(meth)acryloylpropanesulfonic acid, and 2-(meth)acrylamido-2-methylpropanesulfonic acid, vinylsulfonic acid, styrenesulfonic acid and the like and their salts; monomers containing nonionic hydrophilic substituent such as (meth)acrylamide, N-substituted (meth) acrylamides, 2-hydroxyethyl (meth)acrylate, 2-hydroxypropyl (meth) acrylate, methoxypolyethylene glycol (meth)acrylate,

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polyethylene glycol (meth)acrylate and the like; monomers of cationic character such as N,N'-dimethylaminoethyl (meth)acrylate, N,N'-diethylaminoethyl (meth)acrylate, N,N'-diethylaminopropyl (meth)acrylate, N,N'-dimethylaminopropyl (meth)acrylamide, and the like and their quaternary salts. These compounds can be used as alone or mixture of two or more compounds. Preferable are a kind of compound or a mixture of two or more compounds chosen from the following three groups of compounds: (meth)acrylic acid, 2-(meth)acryloylethanesulfonic acid, 2-(meth)acrylamido-2-methylpropanesulfonic acid, and their salts; and N,N'-dimethylaminoethyl (meth)acrylate and their quaternary salts; and methoxypolyethylene glycol (meth)acrylate and (meth)acrylamide. Nagasuna et al further teach that although the monomer concentration in an aqueous monomer solution is generally variable in a wide range, the preferred range is from 20 weight % up to saturation. Nagasuna et al also teach that the water-absorbent resin relating to the present invention comprises a self-crosslinking type prepared in absent of a crosslinking agent and a type co-polymerized during polymerization with a small amount of crosslinking agent, which has polymerizable unsaturated groups or reactive functional groups. As examples of the crosslinking agents are cited N,N'-methylene-bis(meth)acrylamide, N-methylol(meth)acrylamide, ethylene glycol (meth)acrylate, polyethylene glycol (meth)acrylate, propylene glycol (meth)acrylate, polypropylene glycol (meth)acrylate, glycerol tri(meth)acrylate, glycerol mono(meth)acrylate, polyfunctional metal salts of (meth)acrylic acid, trimethylolpropane tri(meth)acrylate, triallylamine, triallyl cyanurate, triallyl isocyanurate, triallyl phosphate, glycidyl (meth)acrylate. As examples of agents having reactive functional groups for example, in a case that a monomer has a carboxyl and/or carboxylate group, polyhydric alcohol derivatives such as ethylene glycol, diethylene glycol, triethylene glycol, tetraethylene glycol, polyethylene glycol, glycerol, polyglycerol, propylene glycol, diethanolamine, triethanolamine, polyoxypropylene, oxyethyleneoxypropylene block co-polymer, pentaerythritol, and sorbitol; polyglycidyl derivatives such as ethylene glycol diglycidyl ether, polyethylene glycol diglycidyl ether, glycerol polyglycidyl ether, diglycerol polyglycidyl ether, polyglycerol polyglycidyl ether, sorbitol polyglycidyl ether, pentaerythritol polyglycidyl ether, propylene glycol diglycidyl ether, and polypropylene glycol diglycidyl ether; aziridine derivatives and related compounds such as 2,2-bishydroxymethylbutanol-tris [3-(1-aziridinyl) propionate], 1,6-hexamethylene-diethylene urea, and diphenylmethane-bis-4,4'-N,N'-diethylene urea; haloepoxyl compounds such as epichlorohydrin and .alpha.-methylchlorohydrin; polyaldehydes such as glutaraldehyde and glyoxal; poly amine derivatives such as ethylene diamine, diethylene triamine, triethylene tetramine, tetraethylene pentamine, pentaethylene hexamine, and polyethylene hexamine;

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polyisocyanates such as 2,4-toluylenediisocyanate and hexamethylenediisocyanate and polyvalent metal salts, these crosslinking agents being used in an amount of about 0.001 to about 1.0 mol. per water-soluble ethylenically unsaturated monomer. See, e.g., the Abstract, cols. 3-8 and Runs 1-8 of Nagasuna et al. Moreover, Nagasuna et al @ col. 12 teach aqueous compositions comprising 100 parts by weight of water-absorbing resin (A1)-(A8) and comparative Runs (B1) – (B3), 0.3 parts by weight of diethylene glycol, 4 parts by weight of water and 0.5 parts by weight of isopropanol. Nagasuna et al therefore anticipate the instantly claimed invention with the understanding that one of ordinary skill in the art, following the guidelines of Nagasuna et al (at least col. 3, lines 60-65), would have readily envisioned the use of the polyglycerol fatty acid esters as the dispersing agent in the Runs and with the understanding that the water absorbent resin composition of Nagasuna et al overlaps in scope with the instantly claimed carboxyl group-containing polymer composition, in both content and character.

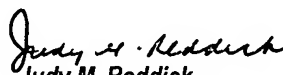
Conclusion

10. *JP 08-157606, JP-08-157531 and EP 349,240, cited by applicant are noted with interest in teaching carboxyl group-containing polymer compositions, similar to the polymer compositions per the claimed invention and considered merely cumulative to the prior art supra. The additional prior art listed on the attached PTO FORM 892 is cited as being illustrative of the general state of the art.*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Judy M. Reddick whose telephone number is (703)308-4346. The examiner can normally be reached on Monday-Friday, 6:30 a.m.-3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (703)308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9310 for regular communications and (703)892-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-8183.


Judy M. Reddick
Primary Examiner
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JMR *JMR*
July 17, 2003